

4th International Conference and Exhibition on

Food Processing & Technology

August 10-12, 2015 London, UK

Monitoring of volatile organic pollutants in marine species of Mediterranean Sea

Fabrizio Cincotta, Concetta Conduro and Antonella Verzera
University of Messina, Italy

Chemical pollution is of special concern in the Mediterranean region due to its particular ecological and socio-economic characteristics. Contamination of marine organisms from human activities can come from different sources either from activities that are directly connected to the marine environment or from waste spread to the marine waters via land-based activities. Contaminants such as heavy metals, PAHs, PCBs, dioxins which are known to bio-accumulate in marine organisms were widely studied and their maximum levels in foodstuffs are set by the European Union Commission (Regulation N° 1881/2006). More volatile compounds such as benzene, toluene, xylene, styrene, short chain chlorinated paraffins (C9-13) important to the production of polymers and numerous consumer products such as solvents, paints, pharmaceutical, etc are less studied. Phthalate esters are also widely used in various industries as alkylated resins, polymeric polyesters, plasticizers, etc and they were detected in sea water by various authors. In this context our research reports the results on the determination of volatile organic pollutants in several species of Mediterranean fish, crustaceans and mollusc. A HS-SPME-GC-MS method was developed for the extraction, identification and quantification of the volatiles in the studied marine species. The following pollutants were quantified: Chloroform, dichloromethane, benzene and its derivatives such as toluene, ethyl-benzene, trimethyl-benzene, ethyl-toluene, styrene, xylenes and phenol, hydrocarbons, chlorinated and phthalates. Benzene and its derivatives and phthalates were present in all the analyzed species with the highest amount in crustaceans and mollusk respectively whereas chlorinated paraffins prevailed in fish species.

Biography

Fabrizio Cincotta is a PhD student in Biology and Experimental Medicine. His research is focused on volatile constituents in food by analytical techniques such as GC and GC-MS and is carried out in the laboratory of Food Chemistry and Technology of the Chemical Science Department of the University of Messina, Italy.

fabcincotta@unime.it

Notes: